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AGRICULTURAL MEMORANDUM NO 800

First issue of RAMP addenda - L P Smith

The initial subject classification of memoranda and published papers included the first 600 memoranda. The next 200 have now been classified in the manner outlined below and RAMP addenda will be issued accordingly including any published papers.

RAMP	Subject	Memoranda numbers
A1	General	600, 600A, 601, 656, 696
A2	Meetings	
B1	Instruments, Observations	654, 719, 790
B2	Processed data	733, 734
B3	Frost	613, 618, 662, 671, 731, 757
B4	Acc Temperature	622, 627, 629, 699, 702, 735, 746, 747
B5	Transpiration	586A, 609, 610, 615, 617, 620, 693, 697,
		698, 703, 715, 726, 743, 748, 756
B6	Forecasts	763
C1	Temperature, Humidity	603, 606, 694, 739
C2	Soil Temperature	605, 605A, 646, 728, 741
C3	Sunshine, Radiation	34A, 604, 692, 732, 733, 734, 738, 769
C4	Dry spells	616, 674, 753
C5	Rainfall	705, 720
C6	Heavy Rain	721
C7	Water Balance	623, 635, 636, 637, 638, 639, 640 706, 707
		708, 709, 710, 711, 712, 714, 716, 716A, 717
	722. 723	718, ~~719~~, ~~720~~, 724, 725, 737, 744, 745, 749,
		754, 754A, 781, 782, 783, 793, 797, 798
C8	Wind	602
D1	Agroclimate - general	663, 750, 755, 758, 759, 760
D2	- horticulture	
D3	- cereals	
D4	- livestock	
D5	- seasons	612, 695, 730, 742
E1	Shelter	650
E2	Glass	614, 644, 645, 664, 667, 686, ~~[illegible]~~ 768, 791, 796, 799
E3	Housing	630, 631, 647, 740
E4	Mulching	666, 677
E5	Drainage	619, 653, 685, 727, 745
E6	Irrigation	634, 655
E7	Work days	628, 700
New RAMP		
E8	Spraying	675, 676
F1	Crops - grass	607, 608, 616, 652, 674
F2	- barley and wheat	657, 727
F3	- maize etc	626, 660, 677, 785, 792
F4	- fruits	665
F5	- misc	611, 658, 668, 669, 670, 701, 713, 729,
		752, 770, 771, 772, 773, 774, 789, 795
F6	- forestry	
F7	- diseases	624, 625, 659, 672, 673, 673A, 679, 751
		762, 784, 786, 787, 788

New RAMP	Subject	Memoranda numbers
G1	Animals - entomology	661, 704
G2	- cattle, sheep	648
G3	- products	621, 651, 678, 687
G4	- diseases	641, 642, 643, 649, 736, 761, 761A, 764, 765, 766, 767, 775, 776, 777, 778, 779
G5	- transport	780
H1	Human diseases	632, 633, 680, 680A, 680B, 681, 681A, 682, 682A, 683, 684, 688, 689, 690, 691, 794

Any comments or suggestions on this paper should be referred to the author.

Meteorological Office
Bracknell

April 1976

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RAMP ADDENDUM NO 1 General Papers A1

Agricultural Memoranda

No 600 600A	1974	L P Smith	The first six hundred Explanation of RAMP series and classification	3pp & 1p
No 601	1974	R H Jones	Bibliography of Recent Papers Full references of 63 papers published by M.O staff, 1968-73.	6pp
No 656	1974	C V Smith	On some temperature dependent physiological processes in organisms that tend to take up the temperature of their surroundings. A discussion paper aiming at a more useful exposition of the temperature factor.	4 diag 7pp
No 696	1975	C V Smith	On the synthesis of temperature dependent biological data. A further paper on the lines of 656, suggesting the use of a "Metabolic Change Unit" in temperature-sensitive activities.	1 diag 11pp

Published Papers

38.1975	L P Smith	Agricultural Aspects of International Meteorology. Agric Admin, 2(1):43-48
39.1975	L P Smith	Methods in Agricultural Meteorology Elsevier Press, Amsterdam, 210pp.

AGRICULTURAL MEMORANDA - NIL

PUBLISHED PAPERS - NIL

AGRICULTURAL MEMORANDA

No 654	1974	L P Smith	EHF/EHS experiments - special observations References concerning various non-standard observations 1959-71.	1p
No 719	1975	J Cochrane	Some effects of Site Changes at East Malling Research Station. Analysis of site to site comparison of of rainfall, air and soil temperatures.	3pp
No 790	1976	L P Smith	Random Error Experiment Details of experiment carried out at Kew in 1949 at four apparently identical sites.	11pp

Published Papers Nil

Agricultural Memoranda

No. 733	1975	L P Smith	Correlation between monthly means of sunshine and radiation on a horizontal surface: Agroclimatic area means, Regressions for Kew, Eskdalemuir and Lerwick on monthly basis, including a "clean air" improvement factor for Kew	4 pp
No. 734	1975	L P Smith	Correlation between monthly means of illumination and sunshine: Agroclimatic averages As. 733 for illumination	4 pp

Published Papers. Nil.

RAMP ADDENDUM NO. 1

Frost B.3.

Agricultural Memoranda

No. 613.	1974	L P Smith	Relationship between accumulated degrees of frost and monthly mean minima Regressions derived for East Malling and tested for Bodiam	2 pp
No. 618	1974	L P Smith	Seasonal accumulated degrees of frost and mean winter minimum temperature Examination of 17 years record at 4 stations (results in °F)	1 p
No. 662	1974	L P Smith	EHf/EHS experiments - frost protection References 1961-71 regarding irrigation sprinkling and polythene cover.	1 p
No. 671	1974	D Forsdyke	Monthly averages of hours of frost in March, April, and May, at 6 sites in England, Wales. Analysis of 6 stations, for radiation and wind frosts, relationship with mean temperatures	1 diag. 3pp
No. 731	1975	F P Sims	Frost frequency in Spring at Luddington EHS with general comments on the presentation of frost surveys. Analysis and discussion of presentation of frost risk estimates	2 diag 3 pp
No. 757	1975	F P Sims	Frost Surveys - a revised method of analysis An extension of 731, explaining a more realistic method of interpreting short-duration frost surveys	4 diag., 5 pp.

Published Papers. Nil.

Agricultural Memoranda

No 622	1974	C V Smith	An alternative to degree days and development studies. A system involving the weighting of temperature sums on an increasing scale to allow for change in metabolic reaction rates.	2 diag 3pp
No 627	1974	J D Morgan	Accumulated Degree-Days above 10°C in SW England. 15 year data for 5 stations in months May-October.	3pp
No 629	1974	D Forsdyke	Day and night values of accumulated temperature below various bases for selected sites. Mean monthly values for six stations, on day/night basis below 6 temperature bases.	4pp
No 699	1975	L P Smith	Agroclimatic area averages - accumulated day-degrees of winter frost. Regression formula using monthly mean temperatures.	2pp
No 702	1975	J B Tyldesley	Use of degree-day idea when the response of the organism to temperature is complex. Use of temperature response curve of an organism to formulate sums of temperature above various bases.	1 diag 2pp
No 735	1975	L P Smith	Accumulated Temperatures above 10°C - a quick approximation. Use of monthly mean temperatures to find day-degree values from a daily basis.	1p
No 746	1975	L P Smith	Variation of accumulated day-degrees of winter frost with height. Use of 699 to find change with height values for 7 areas.	1p
No 747	1975	L P Smith	Variation of May-October day-degrees above 10°C with height. Use of 735 to find change with height values for 6 areas.	1p

Published Papers Nil

RAMP ADDENDUM NO 1

Agricultural Memoranda

No. 586a	1974	H A Douglas	Evaporation from bare soil in April A correction to part of Ag Mem 586	2pp
No 609	1974	L P Smith	Variation of Potential Transpiration with height Use of 3 stations in NW, height range 92–2780 ft, 5 years data, to obtain monthly values	3pp
No 610	1974	L P Smith	Variation of Penman term "Ea" with height Data of 609 examined with respect to wind-saturation deficit term only	1p
No 615	1974	H A Douglas	Evapotranspiration from a growing crop with incomplete cover Three crop cover patterns and two soil water extraction models, extending Ag Mem 586 to case of partial cover	4pp
No 617	1974	L P Smith	Variation of Potential Transpiration with height-statistical analysis Summer six-month totals from a number of stations analysed with respect to height, latitude and distance from coasts	1p
No 620	1974	L P Smith	Evapotranspiration from bare soil and partial crop cover Extension of Ag Mem 586 & 615	2pp
No 693	1975	L P Smith	Agro-climatic area averages - summer potential transpiration The 1941–70 old county averages are transposed into new agroclimatic areal values (see Ag Mem 750)	6pp
No 697	1975	L P Smith	Agro-climatic area averages - winter potential transpiration Transposition of Tech Bull 16 values	3pp
No 698	1975	L P Smith	Agroclimatic area averages - accumulated P.T in growing season Use of Ag Mems693, 695 and 697	2pp
No 703	1975	L P Smith	Agroclimatic Areas - estimated average potential transpiration for coastal areas Extension of 693 and 697	3pp
No 715	1975	L P Smith	Effective Transpiration Averages, 1941–70 Conversion factor from averages calculated from two sets of averages to true values, also includes a formula for standard deviation about the average	1p

No 726	1975	L P Smith	Agroclimatic area averages 1941-70 Effective Transpiration and maximum summer SMD Use of Ag Mems715 & 718	1p
No 743	1975	L P Smith	Potential and Effective Transpiration in the Growing Season - Statistical Relationship Examination of regressions with respect to height and to rain and PT factors	4pp
No 748	1975	L P Smith	Effective Transpiration - year to year variation Regression equations on annual rainfall for quartiles and 1/10 chances	1p
No 756	1975	L P Smith	Soil adjustments to effective transpirations Use of 755 to attempt a correction for type of soil	1p

Published Papers

10	1975	D R Grant	Comparison of evaporation from barley with Penman estimates Agric Meteorol., 15: 49-60
11	1975	L P Smith H A Douglas	Theoretical consideration of the water loss by evaporation from bare soil and the effect of partial cover ADAS Qu. Rev., 16: 135-144

Agricultural Memorandum

No 763	1975	L P Smith	Analysis of trial forecast for rainfall ratings A 4 station trial of rain probability forecasts to supplement dry spell system 2 pp

Published Papers

11.	1974	L P Smith	Weather lore Encyclopaedia Britannica 15TH ed. 705-707

Agricultural Memoranda

No 603	1974	L P Smith R P Rumney	Variation of Mean Temperature with height in NW England Use of 7 years data from 8 stations, height range 86-2780 feet to obtain monthly values	1p
No 606	1974	L P Smith	Variation of vapour pressure with height Use of 5 years data from 3 stations in NW England to obtain monthly values.	2pp
No 694	1975	L P Smith	Agroclimatic area averages - average mean monthly temperature 1941-70 Areal values for areas (Ag Mem 750) extracted from Met O 3 maps	3pp
No 739	1975	L P Smith	Variations of monthly mean temperatures with height in Wales 14 years data from 3 stations in east Wales, height range 235-995 ft to obtain monthly values.	1p

Published Papers nil

Agricultural Memoranda

No	605 605a	1974	L P Smith R P Rumney	Rate of change of earth temperature with height for stations in NW England	
				Monthly values deduced from 7 years data from 6 stations over 91 - 556m range.	1 p
				In 3 Welsh stations (5-386m) similarly analysed	1 p
No	646	1975	J W Davies	Averages in soil temperatures at 10 cm and 20 cm depth, 1959-68	
				Averages, highest and lowest monthly means and standard deviation for 82 stations	48 pp
No	728	1975	L P Smith	Agroclimatic area averages 1941-70 - earth temperatures at 1 foot	
				Met O 3 data, reduced to sea level using Ag Mem 605a, interpolated to produce areal values	3 pp
No	741	1975	L P Smith	Year to year variations in monthly means of 1 ft. earth temperatures	
				Sample decades for each month for heavy and light soils	1 p

Published Papers NIL

Agricultural Memoranda

No 34A	1975	L P Smith	Year to year variations in monthly sunshine totals Revised analysis of Ag Mem 34 giving sample decades for each month for (two) inland regions	1p
No 604	1974	L P Smith	Variation of sunshine with height in NW England Monthly gradients, using 7 stations over 86-2780 feet range	1p
No 692	1975	L P Smith	Agroclimatic Areas - Sunshine Averages, 1941-70 Areal values extracted from Met O 3 monthly sunshine maps	3pp
No 732	1975	R P Rumney	Agroclimatic area averages of duration of daylight (including civil twilight) Data for mean latitudes of areas (See Ag Mem 750)	3pp
No 733	1975	L P Smith	Correlation between monthly means of sunshine and radiation on a horizontal surface: Agroclimatic Area means Regressions for Kew (including turbidity factor) Eskdalemuir & Lerwick and consequent areal means	4pp
No 734	1975	L P Smith	Correlation between monthly means of illumination and sunshine: Agroclimatic area averages As 733 for illumination	4pp
No 738	1975	L P Smith	Year to year variations in monthly means of radiation & Illumination Application of Ag Mems 34A, 733 and 744	1p
No 769	1975	L P Smith	Accumulated Radiation over Growing Season Use of Agroclimatic Area data to give average values	1p

Published Papers Nil

Agricultural Memoranda

No 616	1974	J B Tyldesley R A Blackmore R P Rumney	Sequences of dry days for grass conservation in Lancashire and Yorkshire 20 years data for 6 stations.	5 pp
No 674	1974	R A Blackmore J B Tyldesley	Sequences of dry days for grass conservation in Cumbria, Northumberland and Durham An extension of 616, 13 stations.	4 pp
No 753	1975	L P Smith	Agroclimatic Averages - Length of Summer Drought Use of Ag Mem 79 to produce areal averages.	1 p

Published Papers Nil

RAMP ADDENDUM No.1 Climate - Rainfall C.5

Agricultural Memoranda

No.705	1975	L P Smith	Monthly subdivision of average annual rainfall 1941 - 1970. Regression of monthly averages on annual averages in 9 areas.	3pp
No.720	1975	L P Smith	Agroclimatic Area Averages, 1941 - 1970, Rainfall Use of 705 on computer extracted areal averages of annual rainfall	2pp

Published Papers NIL

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RAMP ADDENDUM No 1 CLIMATE - Heavy Rains
C6

Agricultural Memoranda

No 721	1975	L P Smith	Expectancy of heavy rain - agroclimatic areas Extension of Ag Memo 470 & 471, giving values for areas (see Ag Mem 750)	2pp

Published Papers Nil

Agricultural Memoranda

No 623	1974	L P Smith	Estimated Return Dates and Excess Winter Rain, 1973-74 Station details as per Tech Bull 24	3 pp
No 635	1974	W G Harper	Excess Winter Rainfall in the North of Scotland 1954-1973 averages for 17 stations also quartiles and extremes and excess April-June rainfalls	4 pp
No 636	1974	W G Harper	Excess Winter Rainfall in the East of Scotland As 635 for 16 stations	4 pp
No 637	1974	W G Harper	Excess Winter Rainfall in the West of Scotland As 635 for 11 stations	4 pp
No 638	1975	W G Harper	Dates of Return to Field Capacity in the North of Scotland Return dates, quartiles, extremes and data for individual years for the 17 stations used in 635	1 diag. 5pp
No 639	1975	W G Harper	Dates of Return to Field Capacity in the East of Scotland As 638 for 16 stations	1 diag. 5pp
No 640	1975	W G Harper	Dates of Return to Field Capacity in the West of Scotland As 638 for 11 stations	1 diag. 5pp
No 706	1975	L P Smith	End of Winter Drainage Formulae for median and quartiles with results for Tech Bull 24 stations	5 pp
No 707	1975	L P Smith	Estimated Actual Soil Moisture Deficits, 1941-1970 NORTHEAST Formulae for median and quartiles results for 12 stations	2 pp
No 708	1975	L P Smith	Estimated Actual Soil Moisture Deficits, 1941-1970 NORTHWEST As 707 for 17 stations	2 pp
No 709	1975	L P Smith	Estimated Actual Soil Moisture Deficits, 1941-1970 MIDLANDS As 707 for 21 stations	2 pp

No	710	1975	L P Smith	Estimated Actual Soil Moisture Deficits, 1941-1970 EAST As 707 for 14 stations	2 pp
No	711	1975	L P Smith	Estimated Actual Soil Moisture Deficits, 1941-1970 SOUTH-EAST As 707 for 14 stations	2 pp
No	712	1975	L P Smith	Estimated Soil Moisture Deficits 1941-1970 SOUTH-WEST As 707 for 14 stations	2 pp
No	714	1975	L P Smith	Estimated Soil Moisture Deficits 1941-1970 WALES As 707 for 15 stations	2 pp
No	716 716a	1975	L P Smith	Average Return to Capacity Dates, 1941-1970 Formulae for median and quartiles for 6 regions of Tech Bull 24 and amendments	2 pp & 1 p
No	717	1975	L P Smith	Average Excess Winter Rains 1941-1970 Formulae for median and quartiles for 6 regions of Tech Bull 24	2 pp
No	718	1975	L P Smith	Average Maximum Actual Soil Moisture Deficit in Summer Formulae for median and quartiles for 6 regions of Tech Bull 24	2 pp
No	719	1975	L P Smith	Agroclimatic Area Averages, 1941-70 Return to Capacity Dates Use of 716 to obtain areal averages	1 p
No	720	1975	L P Smith	Agroclimatic Area Averages 1941-70 Excess Winter Rains Use of 717 to obtain areal averages	1 p
No	724	1975	L P Smith	Agroclimatic Area Averages, 1941-70 Estimated Actual SMDs Use of Ag Mems 707-714 to obtain areal averages	2 pp
No	725	1975	L P Smith	Agroclimatic Area Averages, 1941-70 End of Winter Drainage Use of 706 to obtain area averages	1 p
No	737	1975	L P Smith	Return Dates and Excess Winter Rains 1974/75 Data for Tech Bull 24 stations	2 pp
No	744	1975	L P Smith	Variation of maximum summer soil moisture deficit with height and summer rainfall Regression formulae for 6 regions	1 p

No	745	1975	L P Smith	Variation of drainage parameters with height and summer rainfall Regression formulae for 6 regions	2 pp
No	749	1975	L P Smith	End of field capacity - year to year variation Relation between 1/10 value and annual rainfall	1 p
No	754 754a	1975	L P Smith	Quick formulae for excess winter rain Regressions on rain and P.T.	1 p & 1 p
No	781	1976	H Drinkwater	Estimation of Areal values of excess winter rains Formulae for using 100 sample stations to obtain annual areal values	5 pp
No	782	1976	L P Smith	Return Dates - Formulae using annual parameters Uses annual averages of rainfall and P.T.	1 p
No	783	1976	H Drinkwater	Estimation of Areal Return Dates As Ag Mem 781 for return dates	8 pp
No	793	1976	L P Smith	Water Balance sample stations Averages Stations used in Ag Mems 781 & 783 Averages of return date and excess winter rains	4 pp
No	797	1976	L P Smith	Areal Return Capacity Dates 1975-6 Provisional analysis of 1975/6 season	1 p
No	798	1976	L P Smith	Excess Winter Rains, March 1st 1976 Interim analysis of very dry winter	1 p

Published Papers NIL

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Agricultural Memoranda

No 602	1974	L P Smith	Change of wind with height - seasonal variations Use of data from Northern England to estimate monthly rates of change with height above sea level. 1p

Published Papers

Nil

Agricultural Memoranda

No. 663	1974	L P Smith	EHF/EHS. Experiments-agroclimate. One reference to Weather in Yorkshire Wolds	1p
No. 750	1975	L P Smith	The Agricultural Climate of England & Wales A summary of contents of forthcoming Technical Bulletin of MAFF.	1p 1p
No. 755	1975	L P Smith	Agroclimatic Areas - Size and land classification Details of size of new areas, and its subdivision into land classification types.	3pp
No. 758	1975	L P Smith	Change of weather factors with height Mean change with height in various districts of parameters used in Agroclimate Bulletin (Ag. Mem. 750)	4pp
No. 759	1975	L P Smith	Change of weather factors with average rainfall Supplementary to 758 involving parameters more dependent on rainfall	2pp
No. 760	1975	L P Smith	Variations of weather factors about the 1941-70 average Quartiles and 1 in 10 occurrences of parameters in Agroclimate Bulletin. (Ag. Mem 750)	2pp

Published Papers

21	1974	R W Gloyne	Climatic Factors Br. Crop Prot.Counc.Monogr.No 9,11pp
22	1975	R P Rumney	Agroclimatic areas - a new approach to the issuing of weather and climate information. ADAS.Qu.Rev., 17:23-75

AGRICULTURAL MEMORANDA - NIL

PUBLISHED PAPERS - NIL

RAMP ADDENDUM No1

CEREALS D3

AGRICULTURAL MEMORANDA - NIL

PUBLISHED PAPERS - NIL

RAMP ADDENDUM No1

AGRICULTURAL MEMORANDA - NIL

PUBLISHED PAPERS - NIL

Agricultural Memoranda

No 612	1974	V Bailey	Date of start of growing season in terms of height and latitude. Regression equations for northern, southern and southwestern England.	1p
No 695	1975	L P Smith	Agroclimatic area averages - estimation of average grass growing season, 1941-70. Dates derived from earth temperatures were regressed on monthly air temperatures.	2pp
No 730	1975	L P Smith	Agroclimatic area averages 1941-70, length of grazing season. Extension of 695, with delayed start and determined by return to field capacity date.	2pp
No 742	1975	L P Smith	Growing and grazing seasons - statistical relationships. Regressions on height for various regions of England and Wales; also on mean annual air and soil temperatures for growing season. Regressions include rainfall for grazing season.	4pp

Published Papers Nil

Agricultural Memoranda

No 650	1974	L P Smith	EHF/EHS Experiments - shelter References 1952-74; shelter and shelter effects, erosion 1p

Published Papers NIL

Agricultural Memoranda

No 614	1974	F P Sims	Wind and Temperature in relation to the loss of heat from glasshouses Analysis of 5 years data from 4 stations regarding frequency of combinations of wind and temperature and consequent heating requirements. The wind factor is dominant.	6 pp
No 644	1974	F P Sims	Wind and Temperature in relation to the loss of heat from glasshouses - II Extension of 614, involving day and night values.	2 pp
No 645	1974	D Forsdyke	Average monthly heat losses from glasshouses by day and night for selected sites Data for 6 sites for various base temperatures.	4 pp
No 664	1974	L P Smith	EHF/EHS Experiments - crop cover References. 1952-1972; variety of crops and type of cover.	2 pp
No 667	1974	L P Smith	EHF/EHS Experiments - Glasshouse climate References 1959-1971; observations on light, irrigation, heating, ventilation; growing room techniques.	1 p
No 686	1974	J B Tyldesley	Estimating heat losses from glasshouses for different day and night temperature regimes Check on simple formulae for day/night temperature divisions.	3 pp
No 763	1975	L P Smith	Temperatures under glass cloches Record of temperatures taken under cloches and in the open on three demonstrations in the early 1950s.	2 pp
No 791	1976	J Cochrane	Glasshouse Watering Requirements at Cranleigh, Surrey Comparison of methods for estimates of glasshouse crop water requirements, emphasizing major errors to which evaporimeters are liable.	4 pp
No 796	1976	L P Smith	Soil temperatures under glass 2 and 4 inch temperatures under Dutch Lights	1 p
No 799	1976	L P Smith	Soil 4 inch temperatures under heated glass Measurements in ground beds, troughs and pots at various positions with a commercial house	10 pp

Published Papers NIL

Agricultural Memoranda.

No. 630	1974	C V Smith	Ventilated onion bulk storage temperatures - a simulation study A detailed analysis of the physics of ventilation and storage temperatures 4 diag. 13pp
No. 631	1974	C V Smith	Onion storage temperatures and keeping quality. Use of techniques explained in 622 in relation to stored onions, estimated the degree of 'metabolic change' and consequent sproutings. 6 diag. 8pp
No 647	1974	L P Smith	EHF/EHS Experiments - Animal Housing References 1960-74; poultry, ewes and calves 2 pp.
No. 740	1975	C V Smith	Beef Housing Studies - Working Report II An extension of 555; considers air changes per hour and ventilation rates 3 diag., 6pp

Published Papers

6	1974	C V Smith	Farm Buildings. In "Heat loss from Animals and Man" Monteith & Mount, Butterworths: 345-366

RAMP ADDENDUM NO 1 TECHNIQUES - Mulching E.4.

Agricultural Memoranda

No 666	1974	L P Smith	EHF/EHS Experiments -Mulching References 1960-67, organic and non-organic mulches, several crops. 1 p
No 677	1974	J Cochrane	Maize seed bed temperatures Temperatures under a bitumen mulch and under slurry and effect on degree-day accumulations 2 pp

Published Papers -

1.	1975	J W Davies.	Mulching Effects on Plant Climate and Yield WMO Technical Note No 136, 92 pp.
2.	1975	J W Davies	The control of soil climate by mulching. In "Progress in Biometeorology", Div C Vol 1 379-389 (Swets and Zeitlinger, Amsterdam)

Agricultural Memoranda

No 619	1974	J Cochrane	Field Drainage at Jealott's Hill Comparison of estimated and observed drainage totals 1971-2 and 1972-3.	2 pp
No 653	1974	L P Smith	EHF/EHS Experiments - Drainage References 1965-73 of experiments at 3 EHFs including slurry disposal.	1 p
No 685	1974	C V Smith	Soil moisture and field drainage operations Detailed examination of soil water availability, extraction rates, depths of drying out, and rewetting of soils. 1 diag.	19 pp
No 727	1975	L D J Harvey C V Smith	The extraction of water from heavy soil under winter sown cereals An extension of 685, comparing results of model with observations at experimental sites. Several diags.	7 pp
No 745	1975	L P Smith	Variation of drainage parameters with height and with summer rainfall Regression formulae for 6 regions.	2 pp

Published Papers NIL

RAMP ADDENDUM NO 1 TECHNIQUES - Irrigation E.6

Agricultural Memoranda

No 634	1974	W G Harper	Irrigation needs in the main agricultural regions of Scotland An extension of 265 to Scotland. The total irrigation need in the driest year for Plan 1 - 2 maps. 2 pp
No 655	1974	L P Smith	EHF/EHS Experiments - Irrigation References 1958-1972, on irrigation experiments on a variety of crops. 2 pp

Published Papers nil

Agricultural Memoranda

No 628	1974	F P Sims	A method for estimating work days for grass conservation using accumulated vapour pressure deficits. Analysis of 10 years data for Shawbury and comparison with the "dry-spell" approach.	1 diag, 5pp
No 700	1975	K C Smith	Sequences of work days for conservation - West Midlands. Analysis of dry day sequences for a number of stations in regard to five different conservation methods.	9 diag, 2pp

Published Papers

3	1975	L P Smith	Soil Conditions In: Progress in Biometeorology, Div C. Vol 1: 299-310. (Swets and Zeitlinger, Amsterdam)

Agricultural Memoranda

No 675	1974	J B Tyldesley	Weather Conditions for Crop Spraying I. An analysis of conditions at Leconfield, wind, wetness and temperature. 2 diag., 3 pp
No 676	1974	J B Tyldesley	Weather Conditions for Crop Spraying II An extension of 675, with further analysis of wind speeds. 2 pp

Published Papers Nil

Agricultural Memoranda

No 607	1974	D Forsdyke	Grass conservation and humidity Extension of Ag Mems 531, 574; analyses weather at Aberporth, Rhoose and Shawbury with regard to 3 categories of suitable weather. 2 pp
No 608	1974	C V Smith	On the weather risk with autumn sown leys Extension of 584; considers soil temperature and moisture in respect of crop establishment 1 diag. 1 diag ., 4 pp
No 616	1974	J B Tyldesley R A Blackmore R P Rumney	Sequences of dry days for grass conservation in Lancashire and Yorkshire Extension of 547; analysis of dry spells at 6 stations, May to September 5 pp
No 652	1974	L P Smith	EHF/EHS Experiments - Grass References. 1961-74; grazing, poaching, hay 1 p
No 674	1974	R A Blackmore J B Tyldesley	Sequences of dry days for grass conservation in Cumbria, Northumberland and Durham As 616, using 20 year records of 13 stations. 4 pp

Published Papers

8.	1975	M G Roy	Climatic and other limitations to the seasonal production of intensively managed grassland in the UK. Proc. 7th Intnl. Biomet. Congr., Biomet. 6 (Part 1): 80-81

Agricultural Memoranda

No 657	1974	L P Smith	EHF/EHS Experiments - Cereals References. 1963-1973; barley wheat and oats: 2 pp
No 727	1975	L D J Harvey C V Smith	The extraction of water from heavy soil under winter sown cereals Detailed examination of depths to which soil is dried out with aim of assessing possible depths for sub-soiling 6 diag., 7 pp

Published Papers

5.	1975	M N Hough	Meteorological models for the effects of weather on barley development and yield. In: Progress in Biometeorology, Div. C. Vol 1: 240-251 (Swets & Zeitlinger, Amsterdam)

Agricultural Memoranda

No 626	1974	J B Tyldesley	Maize in the north - II An extension of 591, examining results of trials at Bishop Burton 1971-3 and commenting on accumulated temperatures	2 pp
No 660	1974	L P Smith	EHF/EHS experiments - Introduced Crops References 1963-73, including silage maize, oil seed rape, and navy beans	1 p
No 677	1974	J Cochrane	Maize seed bed temperatures Short report of NIRD experiment with a bituman mulch.	2 pp
No 784	1976	D Forsdyke	Composition of maize silage and accumulated temperature Quality of maize silage is highly correlated with accumulated temperatures above 10°C for 4 years data from Filton.	1 p
No 792	1976	L P Smith	Distribution of maize - 1973 Analysis of 1973 crop acreage returns w.r.t. average accumulated temperatures	

Published Papers

2.	1975	M N Hough	Mapping areas of Britain suitable for maize on the basis of temperature. ADAS. Qu. Rev., 18: 64-72.
3.	1975	R H Phipps J Cochrane	The production of forage maize and the effect of bitumen mulch on soil temperature. Agric Meteorol., 14: 399-404.

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Agricultural Memoranda

No 665	1974	L P Smith	EHF/EHS, experiments - fruit References 1957-1967, including experiments on apples, blackcurrants, raspberries, blossom timing, frost and storage. 1 p

Published Papers nil

Agricultural Memoranda

No. 611	1974	L P Smith	Days suitable for onion seed germination in August Linkage of suitable days with monthly rainfall totals.	1p
No. 658	1974	L P Smith	EHF/EHS experiments - misc farm crops References 1960-1972 including experiments on potatoes, cauliflower, beetroot, leeks, onions, carrots, celery, cabbage and lettuce.	2pp
No. 668	1974	L P Smith	EHF/EHS experiments - Glasshouse crops References 1959-1972, mainly dealing with tomatoes.	3pp
No. 669	1974	L P Smith	EHF/EHS experiments - flowers and bulbs References 1960-1972.	3pp
No. 670	1974	L P Smith	EHF/EHS experiments - Indoor Crops References 1960-1972, dealing with rhubarb and mushrooms.	2pp
No. 701	1975	C V Smith	Metabolic change Unit Summation for Sugar Beet Germination Analysis of soil temperatures and days to emergence.	2pp
No. 713	1975	J B Tyldesley	Weather for Sugar Beet in 1974 Examination of transpiration and rainfall suggesting that disease effects were more important in regard to low yields.	3pp
No. 729	1975	C V Smith L D J Harvey	On Sugar Beet Germination Extension of 701, examining degree days of soil (10cm) temperature above 37°F and 45°F making use of controlled constant temperature laboratory findings. 2 diag.	10pp
No. 752	1975	J B Tyldesley	A French recipe for growing Soya beans A summary of soya requirements, including sowing dates and irrigation criteria in French conditions of climate	3pp

No. 770	1976	L P Smith	Sugar Beet yields, England and Wales 1941-56 A report of work carried out in 1959, relating national yields to an 'effective transpiration' parameter.	2pp
No.771	1976	L P Smith	Sugar Beet yields, Ely, 1945-57 Similar to Ag.Mem 770 using single factory yield data.	1p
No.772	1976	L P Smith	Sugar Beet yields, England and Wales, 1950-73 An extension of Ag.Mem 770 including August & September potential transpiration as additional factor.	1p
No.773	1976	L P Smith	Sugar Beet yields - Effect of April rainfall Analysis-effect of dry and wet Aprils.	1p
No.774	1976	L P Smith	Sugar Beet yields- Weighted Weather Factors An attempt to weight the weather factors with respect to the local beet acreage.	1p
No.789	1976	J B Tyldesley	Sugar Beet in Lowland Lancashire	1 diag. 3pp
No.795	1976	L P Smith	Temperatures within sugar beet clamps Analysis of experiments in commercial clamps, Nov-Jan	3pp

Published Papers

3	1974	L P Smith	The influence of temperature and sunshine on the alpha-acid content of hops. Agric.Meteorol., 13 : 375-382
4	1975	P C Longden R K Scott J B Tyldesley	Bolting of sugar beet grown in England Outlook on Agric. 4 : 188-193

Memoranda and Published Papers Nil

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Agricultural Memoranda

No 624	1974	C V Smith	Cereal Mildew Spray Timing Experiment - a comment	An extension of 355, using 1973 data. 2 diag	1 p
No 625	1974	C V Smith	Cereal Mildew Spray Dates	An analysis based on the assumption that leaf wetness is significant, a hypothesis which is not upheld by plant pathologists. 2 diag	4 pp
No 659	1974	L P Smith	EHF/EHS Experiments - plant diseases	References 1960-1973, including barley mildew, potato blight, common scab of potatoes, yellow rust, powdery and downy mildews.	1 p
No 672	1974	L P Smith J M Seager	Comparison of Beaumont and 90% RH criteria in relation to potato blight outbreaks.	Comparisons over 7 years at 12 stations indicate preference for the 90% criteria	14 pp
No 673 673a	1974	L P Smith J M Seager	The significance of 90% critical periods for Potato Blight	Proposed forecasting rules using accumulated hours fulfilling the 90% criteria, including negative forecasts.	6 pp and 4 pp
No 679	1975	J B Tyldesley	Calculation of an index for sporulation of the Eyespot Fungus	Evaluation of temperature effects, leading to a Daily Thermal sporulation Coefficient 4 diag	3 pp
No 751	1975	J B Tyldesley	Septoria in the North	Analysis of effects of rain and relative humidity	2 pp
No 762	1975	J M Seager	Potato blight 1975 - Results from new scheme	Report on 1975 experience - limited successes in a dry non-blight year, with no major errors.	3 pp
No 784	1976	J M Seager	Swede Mildew Incidence related to Maximum Temperatures and Soil Moisture Deficits	Use of Shaw week maxima and standard SMDs	3 pp
No 786	1976	L P Smith	Swede Mildew - revised SMD estimates	An extension of Ag Mem 784, allowing for fallow period.	2 pp
No 787	1976	L P Smith	Swede Mildew - simplified criteria	Use of Shaw week maxima and June-August rain and PT	2 pp
No 788	1976	L P Smith	Swede Mildew Trials	Tests of Ag Mem 787 on trials data	2 pp

Published Papers

18 1975 L P Smith A meteorological model for the release of mildew spores in a crop of spring barley
Progress in Biometeorology, Div. C., Vol 1: 252-257
(Swets and Zeitlinger, Amsterdam)

Memoranda and Published Papers Nil

Agricultural Memoranda

No.661	1974	L.P.Smith	EHF/EHS experiments - pests References. 1952-1969 including experiments on aphids and on codling moths. 1.p
No.704	1975	C.V.Smith	Metabolic change indices for some aphid species and their parasites Investigates temperature effects on insect and aphid phenology. 5.pp

Published Papers

14. 1975	G.W.Hurst	Meteorology and the Colorado Potato Beetle WMO Technical Note No 137, 51 pp.

Agricultural Memorandum

No.648	1974	L.P.Smith	EHF/EHS experiments - Animal Management References 1961-1973, including work on wintering, gain in live weight, and feeding 2 pp.

Published Papers Nil

Agricultural Memoranda

No 621	1974	L.P.Smith	Summer Milk and Soil Moisture Deficits Mean potential SMD at peak production is c 2 in; start of rapid decrease c 4 in;	1 p
No 651	1974	L.P.Smith	EHF/EHS experiments - animal products References to work or milk and on beehive temperatures.	1 p
No 678	1974	J.B.Tyldesley	Condensation on Eggs - I Discussion of problems regarding best storage temperature and air dew point.	2 diag 2pp
No 687	1974	J.B.Tyldesley	Condensation on Eggs - II Extension of 678 including discussion of air temperature on withdrawal from store.	3 diag 2pp

Published Papers - nil

Agricultural Memoranda

No. 641	1975	L P Smith	Parasitic Gastro-Enteritis - Effect of Rainfall	Analysis of May-August rains and August to November rains the previous year	2pp
No 642	1975	L P Smith	Parasitic Gastro-Enteritis - Effect of Wet Days	Repeat of 641 using wet days instead of rain totals	2pp
No 643	1975	L P Smith	P.G.E. - a forecast formula	Combination parameter of wet days and rainfall	3pp
No 649	1974	L P Smith	EHF/EHS experiments on animal disease	References to reports in annual publications, 1961-1974	1 p
No 736	1975	L P Smith	Hypomagnesia at Tavistock	Examines relation with temperature, ground frosts. December incidence correlates with that in April and May	1 p
No 761 No 761a	1975	L P Smith	Botulism on the Norfolk Broads	Degree of severity linked with days with maximum over 21°C and with difference between evaporation and rainfall	1 p & 1
No 764	1975	L P Smith	The forecasting of botulism deaths on the Norfolk Broads	The logarithm of the number of deaths is related to parameters established in 761	1 p
No 765	1975	J R Starr	Gastro-intestinal nematode infection in sheep and cattle	Further research on lines of Ag Mems 425 and 546 quantifying the summer wetness effect on peak hatch dates in late summer, using Cockle Park data	1 diag., 8 pp
No 766	1975	J R Starr	Gastro-intestinal nematode infection in sheep and cattle: a predictive technique applied to experiments in SE England	Extension of 765 using Kent data	2pp
No 767	1975	J R Starr	Gastro-intestinal nematode infection in sheep and cattle: a predictive technique using 24 hour rainfall data	Extension of 765, suitable when 12 hour rainfall data are not available	8 pp
No 775	1976	L P Smith	Sheep P.G.E. forecasting - simple model	Uses return date previous autumn and May to July rainfall from 6 sample stations	2 pp
No 776	1976	L P Smith	Sheep P.G.E. forecasting - long range	Use of autumn return date only	1 p
No 777	1976	L P Smith	Sheep P.G.E. - use of liver fluke parameters	Uses return date, rain days in May, liver fluke indices in June and July	2 p

No 778	1976	L P Smith	Sheep P.G.E. Forecasting - use of rain days or wet days only An alternative method to that of Ag Mem 777	2 pp
No 779	1976	L P Smith	Sheep P.G.E. Forecasting - successive forecasts Outlines possible procedures for forecasts of autumn intensity to be made at the end of December, May, June and July	2 pp

Published Papers

14.	1975	L P Smith P K C Austwick	Effect of weather on the quality of wool in Great Britain. Vet. Rec., 96: 246-248.

Agricultural Memoranda

No 780	1976	L P Smith	Death of Pigs in Transit - effect of day maxima Death rates on hot days in London area	1 p

Published Papers

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3.	1976	L P Smith W M Allen	A study of the weather conditions related to the death of pigs during and after their transportation in England. Agric. Meteorol., 16(1): 115-124.

Agricultural Memoranda

No 632	1974	L P Smith	Use of South Farnborough Data to forecast Hay Fever incidence in London Uses. South Farnboro mean monthly maxima and minima for April and May to forecast total pollen count, number of days with counts over 50 and over 100.	2 pp
No 633	1974	L P Smith	Forecasting Hay Fever intensity in any area Use of deviation from average minima in April and May to give forecasts in three categories, Severe, Moderate or Low	3 pp
No 680 680a 680b	1974	L P Smith	Weather and the Common Cold Examines relation with minimum temperatures at Kew and Speke of 28 day records of disease incidence in UK (except Scotland)	2, 1 and 1 pp
No 681 681a	1974	L P Smith	Weather and non-Febrile Common Cold Similar analysis to 680	1 p & 1p
No 682 682a	1974	L P Smith	Weather and febrile Sore Throat Relation with vapour pressure, implying importance of indoor humidities	1 p & 1 p
No 683	1974	L P Smith	Weather and Acute Bronchitis Relation with difference between dewpoint and maximum, and with minimum	1 p
No 684	1974	L P Smith	Weather and Otitis Media Relation with minimum temperature	1 p
No 688	1974	L P Smith	Simulation of Febrile Common Cold epidemiology Model of incidence based on weather data only	2 pp
No 689	1974	L P Smith	Simulation of Non-Febrile Common Cold epidemiology As 688	2 pp
No 690	1974	L P Smith	Simulation of Acute Bronchitis Epidemiology As 688	2 pp
No 691	1974	L P Smith	Febrile Sore Throat - effect of previous weather Suggests a possible 10 day time lag in weather effects	1 p
No 794	1976	L P Smith	Check of 1975 Hay Fever forecasts Underestimate of total pollen counts; correct severity days	1 p

Published Papers

3.	1975	L P Smith M C Roy	Hay Fever in London: relationship between the summer disease severity and late spring temperatures Proc. 7th Int. Biomet.Conf., 1975, Biomet. Vol 6. Part 1: 53.
4.	1975	L P Smith R R Davies	A meteorological model relating to the release of graminae pollen. In: Progress in Biometeorology, Div. C, Vol. 1: 258-267